



(11) **EP 0 905 833 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
10.10.2001 Bulletin 2001/41

(51) Int Cl.7: **H01S 3/025**, H01L 27/15,
G02B 6/42

(43) Date of publication A2:
31.03.1999 Bulletin 1999/13

(21) Application number: **98118346.0**

(22) Date of filing: **28.09.1998**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(72) Inventors:
• **Furukawa, Yukio c/o Canon Kabushiki Kaisha
Tokyo (JP)**
• **Ouchi, Toshihiko c/o Canon Kabushiki Kaisha
Tokyo (JP)**

(30) Priority: **30.09.1997 JP 28254997**
07.09.1998 JP 26895198

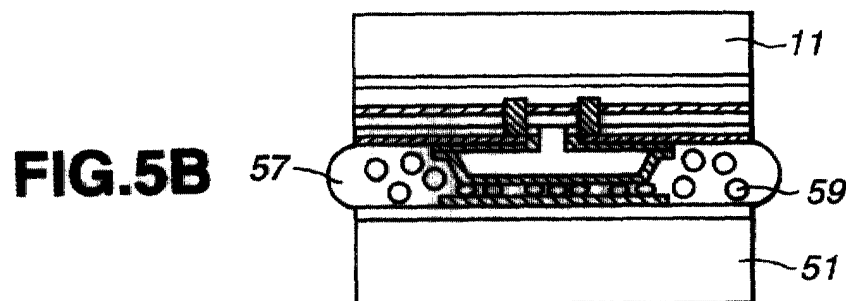
(74) Representative:
Pellmann, Hans-Bernd, Dipl.-Ing. et al
Patentanwaltsbüro
Tiedtke-Bühling-Kinne & Partner
Bavariaring 4-6
80336 München (DE)

(71) Applicant: **CANON KABUSHIKI KAISHA**
Ohta-ku Tokyo 146-8501 (JP)

(54) **Optical device structure and fabrication method thereof**

(57) An optical device structure includes a first substrate structure and a second substrate structure. The first substrate structure includes a first substrate (11, 411), at least an active region (17, 217, 415) formed on the first substrate (11, 411), and at least a first electric connector portion (27, 31, 101, 105, 223, 305, 423, 425, 427) provided corresponding to the active region (17, 217, 415) for injecting a current into or applying a voltage to the active region (17, 217, 415). The second substrate structure includes a second substrate (51, 351), and at least a second electric connector portion (55, 355, 453,

455, 457) formed on the second substrate (51, 351) corresponding to the first electric connector portion (27, 31, 101, 105, 223, 305, 423, 425, 427). The first and second substrates (11, 51, 351, 411) are bonded to each other using an anisotropic electrically-conductive adhesive (57, 59) containing electrically-conductive particles (59) and having an electrically-conductive characteristic only in a direction perpendicular to the first and second substrates, such that the corresponding first and second electric connector portions on the first and second substrates are electrically connected to each other.





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 98 11 8346

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Y	CHANG D D ET AL: "AN OVERVIEW AND EVALUATION OF ANISOTROPICALLY CONDUCTIVE ADHESIVE FILMS FOR FINE PITCH ELECTRONIC ASSEMBLY" IEEE TRANSACTIONS ON COMPONENTS, HYBRIDS, AND MANUFACTURING TECHNOLOGY, IEEE INC. NEW YORK, US, vol. 16, no. 8, 1 December 1993 (1993-12-01), pages 828-834, XP000443354 ISSN: 0148-6411 * page 828 - page 830 *	1-24	H01S3/025 H01L27/15 G02B6/42
A	US 5 258 577 A (CLEMENTS JAMES R) 2 November 1993 (1993-11-02) * column 3, line 57 - column 3, line 67; figures 1,2 *	1,2,5,24	
Y	EP 0 704 947 A (MATSUSHITA ELECTRIC IND CO LTD) 3 April 1996 (1996-04-03) * claim 1; figures 1,4,11 *	1-24	
A	US 5 637 176 A (COREY MICHAEL C ET AL) 10 June 1997 (1997-06-10) * abstract *	22	
A	US 4 780 371 A (JOSEPH CHARLES A ET AL) 25 October 1988 (1988-10-25) * column 6, line 25-34 *	20	
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 14 August 2001	Examiner Jobst, B
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

EPO FORM 1503 03 82 (P04001)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 98 11 8346

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

14-08-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5258577 A	02-11-1993	AT 144654 T	15-11-1996
		CA 2123877 A	27-05-1993
		DE 69214833 D	28-11-1996
		EP 0613590 A	07-09-1994
		JP 7501183 T	02-02-1995
		WO 9310573 A	27-05-1993
EP 0704947 A	03-04-1996	DE 69509184 D	27-05-1999
		DE 69509184 T	28-10-1999
		JP 2795627 B	10-09-1998
		JP 8153935 A	11-06-1996
		US 5796714 A	18-08-1998
US 5637176 A	10-06-1997	NONE	
US 4780371 A	25-10-1988	DE 3761865 D	12-04-1990
		EP 0234347 A	02-09-1987
		JP 1966251 C	25-08-1995
		JP 6051779 B	06-07-1994
		JP 62199611 A	03-09-1987
		US 4859268 A	22-08-1989